Invest Today or Stop Flying Tomorrow

A Critique of Outsourcing Depot Repair

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Chaos theory attempts to explain the fact that complex and unpredictable results will occur in systems that are sensitive to their initial conditions. A common example of this is known as the Butterfly Effect. It states that, in theory, the flutter of a butterfly's wings in China could, in fact, actually affect weather patterns in New Mexico, thousands of miles away. In other words, it is possible that a very small occurrence can produce unpredictable and sometimes drastic results by triggering a series of increasingly significant events.

Downward-directed decisions supporting near-term fiscal expediencies place at risk long-term military readiness. Yet, few write about the looming consequences of too much, too fast. If integrity, selflessness, and excellence truly reign, then critical dialogue is essential in the face of observable flaws, regardless of vogue. This article serves as one such attempt to stimulate critical dialogue on the subject of Air Force depot-level outsourcing.

Victory Without Results

Outsourcing Air Force depot-level repair in a tightly constrained budgetary environment has resulted in neglect of long-term, investment-based planning in favor of near-term executability. The Source of Repair Assignment Process (SORAP) is one culprit taking the Air Force to the brink. Embracing the Revolution in Military Affairs, particularly its accompanying Revolution in Business Affairs, is constantly "talked-up" as a cure to the ills of the acquisition and logistics business. The dialogue is unbalanced. Ironically, as though directly ordered, many prematurely and incorrectly promote the benefits of our revolutions. And while mantra rages on, the proof is lacking, thus declaring victory without results.

It's a Balancing Act

General Shalikashvili, former Chairman of the Joint Chiefs of Staff, stated to Congress several years ago, "Today's modernization is tomorrow's readiness." This is an outstanding statement! The truth is, the statement is more accurate when modified to the following, "Today's modernization [*with proper life cycle planning and investment, to support complex, eventually decades-old, military-unique hardware that is potentially the linchpin of national security, because we are doing away with redundant systems as inefficient*] is tomorrow's readiness."

Joint Publication 4-0, *Doctrine for Logistic Support of Joint Operations*, requires individual Services to balance sustainability of a combat capability with economy, in the context of long-term objectives and capabilities.[1] It further states that this is the greatest challenge to the logistician. This is an unequivocal fact. Basic economics acknowledges lack of resources will drive costs higher. The limited resources in this case are depot-level repair contractors. Reality dictates that long-term support must be provided at the lowest cost or face insolvency. While these seem to be divergent planning factors, they are not. We can and must plan for both. Emphatically, they are both realities. Unfortunately, well-meaning, shortsighted planners, budgeteers, and managers fail to recognize

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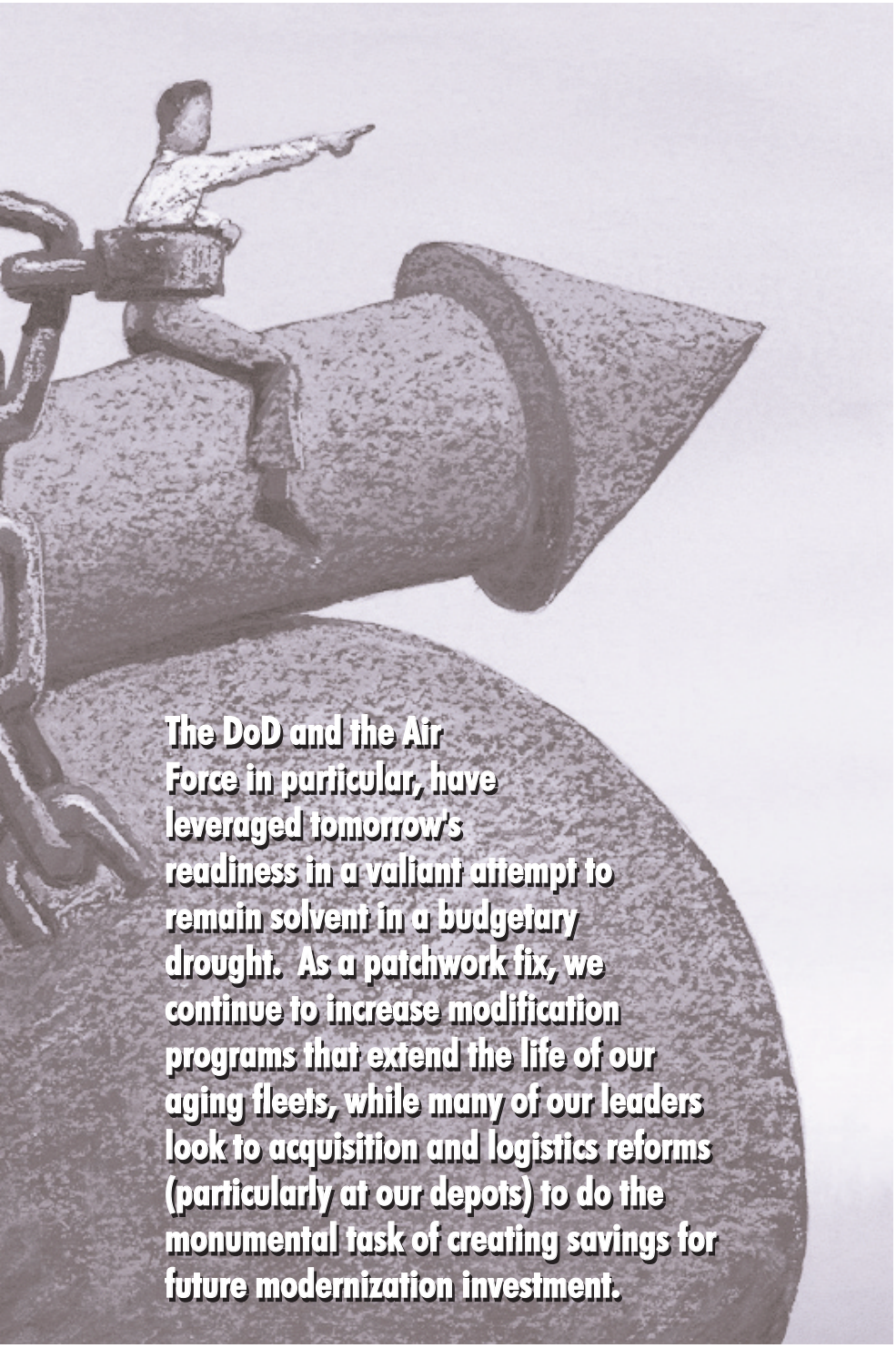
the macroeconomics lesson that reveals the proper perspective: *Near-term investment provides long-term payback.*

As we live in a very constrained fiscal environment, many senior leaders have come to recognize the unfortunate fact that supporting military-unique hardware for up to four or five decades (i.e., B-52, KC-135, C-141, C-5, F-15, F-16, Minuteman III) is *expensive* and *complex* (Figure 1). The corollary to this fact is self-evident: *Reducing operations and support costs is the key to realizing long-term savings in acquisition and logistics.*

One way to achieve these cost savings is competition, according to Secretary of Defense William S. Cohen in his November 1997 *Defense Reform Initiative (DRI) Report*, which stated, "Competition between the public and private sectors works."[2] This may be true, but competing weapon system support with a sharply decreased defense industrial base can have unintended pitfalls unless they are identified and avoided.



The DoD and the Air Force in particular, have leveraged tomorrow's readiness in a valiant attempt to remain solvent in a budgetary drought. As a patchwork fix, we continue to increase modification programs that extend the life of our aging fleets, while many of our leaders look to acquisition and logistics reforms (particularly at our depots) to do the monumental task of creating savings for future modernization investment.

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Integrated Weapon System Management

In the early 1990s, Integrated Weapon System Management (IWSM) emerged as the first real step toward radical reform in defense acquisition and logistics. A keystone of IWSM is the Single Manager (SM) concept, where one accountable individual has "cradle to grave" responsibility for an entire weapon system. From the long-term sustainment perspective, the problem with IWSM is that many System Program Directors (SPD) at Air Force product centers (Aeronautical Systems Center, Electronic Systems Center, Air Armament Center, Space and Missile Systems Center) vs. System Support Managers (SSM) at Air Logistic Centers (Oklahoma City-Air Logistics Center, Odgen-Air Logistics Center, Warner-Robins Air Logistics Center) have retained SM responsibility decades after a system has been fielded. This is problematic because very few of these offices have an experienced staff in depot logistics support.

Further, SMs continue unwisely to press for long-term sustainment by prime contractors via extremely limited competitions or sole-source contracts. To be fair, SMs cannot choose these contract arrangements on their own. In fact, there is a lengthy approval process, which may go all the way to the Air Force Acquisition Executive or higher. If this is a prob-

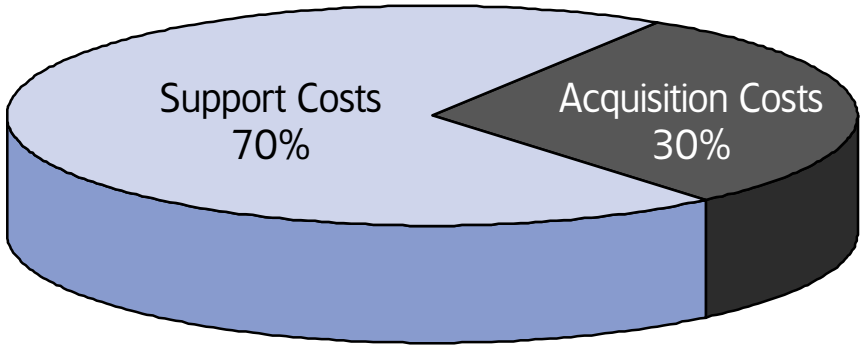

FIGURE 1. **Percent of Life Cycle Dollars**

lem (and I intend to show it is), where then is the advocate for government-organic logistics support? I'll address this issue later, but clearly, it has not been SMs.

SMs make recommendations based on their positions as "cradle to grave" owners. By default, they are first and foremost advocates for "their" single system, not necessarily for the Air Force at large. For this reason they are primarily fielding advocates (i.e., the cradle). The argument is that without a "cradle," there is no reason for a "grave." My assertion is that if you cannot support the weapon, then why birth it in the first place? Putting "rubber on the ramp" mentalities and political pressures did not disappear when IWSM was initiated. Therefore, SMs are under tremendous pressure to field a system ... *their* system. They lack a peer at SPD level who is equally ranked and is the proponent for long-term sustainment of individual weapon systems and the total force.

In many cases tension surfaces in the relationship between the SSM and SPD. The SSM reports to the SPD. Frequently, the SPD doesn't have a clear understanding of sustainment issues. The SPD has the "rubber on the ramp" view that doesn't deal with the realities of business and budget constraints of lifetime sustainment. Unthrottled, near-term executability is absolutely paramount on the SM's list.

To many SPDs, sustainment is oversimplified along the lines of comparing it to "strapping-on a mod." Once the mod is on, everything just falls into place. This mentality ignores the long-term commitment of sustainment that changes daily. Often sustainment relies on the private sector, which expands and contracts to supply and demand, or the public sector (i.e., depots) that are contracting (getting smaller) due to budget woes. If IWSM could only be dismantled so the experts at the logistics centers could handle the sustainment issues, this would force disagreements between SSMs and SPDs to be resolved by Program Executive Offices (PEO) or at Secretary of the Air Force for Acquisition (SAF/AQ) level.

In some cases this is happening now. The problem is that the SSM usually doesn't get a strong voice above the SPD (their boss) to the PEO or SAF/AQ. Logistics support considerations take the back seat far too often. This places great risk on ownership costs for the warfighters and long-term readiness of the force. It dismisses every lesson taught in mandatory acquisition and logistics courses required under the Defense Acquisition Workforce Improvement Act and taught by the Defense Acquisition University (DAU). DAU courses teach that during the system engineering process, long-term logistics support considerations are equal to cost and performance considerations when trade-offs are being considered. Critics contend reality differs from theory. Agreed — so let us reconcile reality and theory with a specific example.

Case in Point

The Source of Repair Assignment Process (SORAP) is formerly known as the Decision Tree Analysis (Figure 2). It is the primary process for making depot maintenance Source of Repair (SOR) determinations and for assessing organic depot maintenance requirements in accordance with DoD Directive (DoDD) 4151.18, *Maintenance of Military Materiel*,[3] and Air Force Instruction (AFI) 21-102, *Depot Maintenance Management*.[4] SORAP is used to determine the "best value" source of depot-level repair to support life cycle readiness.

Further, the SORAP must be completed and approved: 1) for all depot-level maintenance workloads generated by new acquisitions and modifications; 2) whenever there are significant changes to depot-level requirements; and 3) when depot-level workload is considered for workload shift (from organic to contract or vice versa). The process is flawed, not by intent, but because it is being implemented with loopholes, and final decisions are being based on near-term benefits, which are often politically, not business- or budget-driven.

The definition of the phrase "best value" is an ambiguous loophole that lends itself to being misapplied for near-term gain by senior decision makers who feel the pressures to field a system or modification without delay, despite unforeseen (or ignored) logistics concerns. Who decides the final outcome of the SORAP, and how are "best value" misapplications manifested? Let's look at five areas where the process misses the mark.

Proper Advocacy

First, DoDD 4151.18 states that depot maintenance SOR assignments shall be made by the acquiring DoD component logistics head.[5] The Commander, Air Force Materiel Command is the responsible party as assigned by the Chief of Staff of the Air Force and the Secretary of the Air Force.[6]

Ultimately, these decisions are delegated to senior staff positions within the Command where clear understanding of all the issues involved may not exist. Under older acquisition and logistics models (pre-IWSM), there were two four-star Commands: Air Force Systems Com-

mand and Air Force Logistics Command. The Commands had equally strong advocates for acquisition and sustainment during the acquisition cycle. Realistically, they were operating under very different fiscal constraints, but they were always equal advocates.

Working in the current command structure, proper advocacy should come from within the IWSM framework. The Integrated Product Team (IPT) concept is designed to alleviate gross oversight of life cycle cost considerations. Rightfully, a colleague of mine has recently noted that advocacy will not always solve problems, but the absence of equal advocacy is the absence of a safety net and has become the overarching flaw in this process. If the IPT fails, there is no safety net, and balanced risk management does not exist. Unfortunately, advocacy is not the only problem with the SORAP.

Premature SOR Determinations

Where else does the process miss the mark? The second misapplication of the SORAP methodology occurs when SOR determinations (either contractor or organic) are made too early in the acquisition cycle. The reason for this is again shortsighted. The SORAP Manual states, "It is essential that actions required to obtain a SOR decision be taken as early as possible to avoid the expense and program turbulence associated with protecting both options until a decision is made." [7] It also states, "... life cycle support decisions are made early in the design ... rather than waiting until after the design is completed." While I agree that waiting until the "design is completed" is a bit over-cautious, protecting both options until design *stabilizes* is prudent.

But the manual goes on to state, "The Single Manager should initiate actions as soon as reasonable ... but not later than the decision to proceed into Engineering and Manufacturing Development." The design is only conceptual at this point for many of the sub-systems of the end-item. Detailed support planning, by all accounts, consists of bare estimates at this early stage ... guesswork in many cases. If we plan to have no organic repair for an item, and the design is substantially altered and/or logistics analyses prove inaccurate, the unprotected option becomes far more expensive than it would have been if we had paid the "liability insurance" to protect against this possibility.

Bearing the Fiscal Load

The third miss: SMs see investing in a new repair technology at an Air Logistics Center as a burden to their program. Hypothetically, if the navigation systems of the B-2 were similar to that of the Joint Strike Fighter and others, the B-2 program may have to bear the fiscal load of the initial investment to establish the initial capability at the depot. The investment required might be large compared to other program costs. The good news is that repair costs are very low and stable. The problem for the SM is this is "must pay bill, *now*." The SM may not have insight into the design to properly budget for such a large bill in a particular year. This lapse creates a supportability issue for the program.

Then the contractor estimate arrives, and it is much lower because they can do the repairs for a slightly higher cost than the

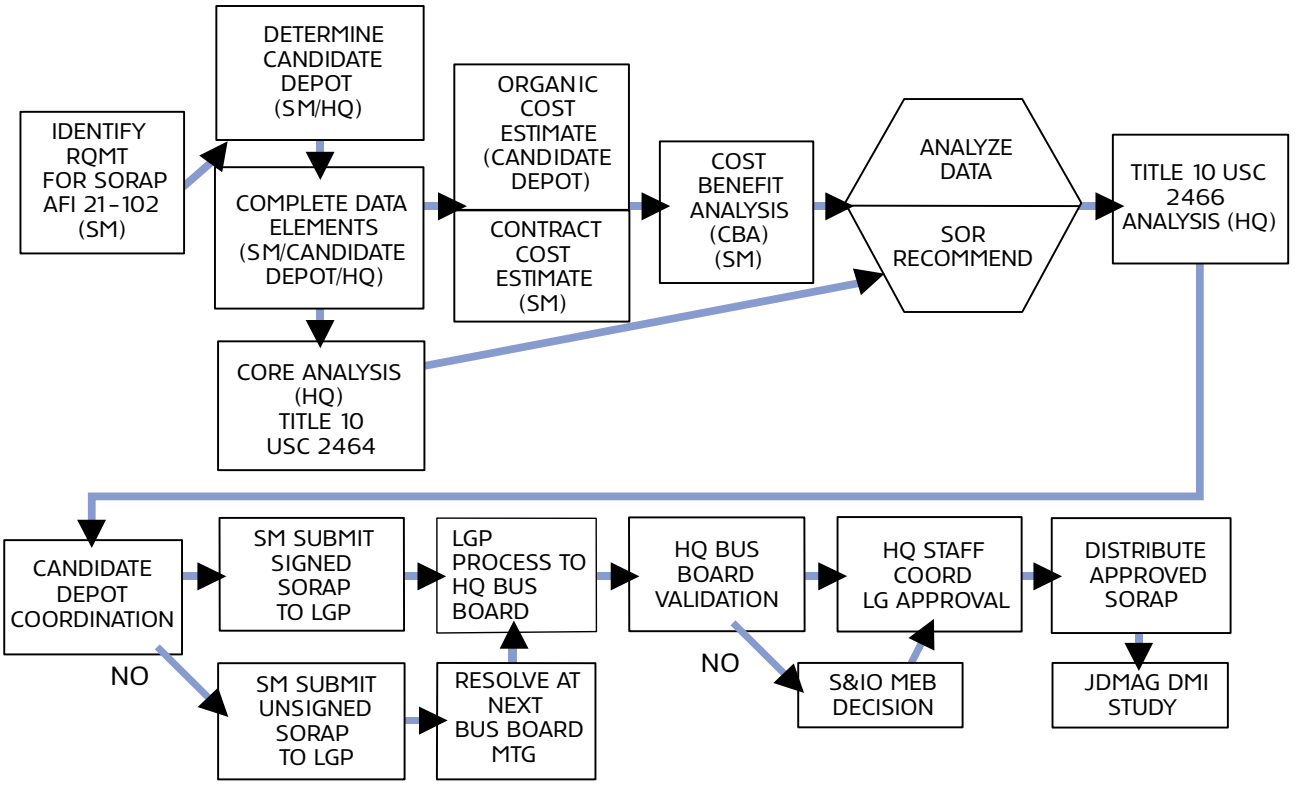

FIGURE 2. **U.S. Air Force Source of Repair (SOR) Process**

government; but, there is no up-front investment required because they already own the capital equipment (used in production and test) and have skilled labor. The likely result is no investment is made. The effort goes sole-source to the prime vendor, and the out-year risk has jumped yet another notch. This is especially, even catastrophically, true if that contractor's business base contracts as it responds to the market's supply and demand.

The investment decision would have provided the opportunity to reduce life cycle costs for multiple weapon systems. This is the "greater-good" concept that the SORAP ignores. It is the "best value" loophole in action. The decision appeared to be the "best value," but it was measured in that year only, and we again declare victory before results. The lost savings in out-years would have provided needed funds for future modernization efforts.

At the same time, it would keep the workforce at the Air Logistics Centers current on new technology. Instead, the near-term, expedient decision relegates the blue-collar workforce to antique fixer/dealer status. As an aside, ask yourself, "What youth today would want a job fixing half-century old (or older) parts at a government depot, when they could work for a defense contractor making higher pay repairing new technology?" Indeed, the implications are far reaching.

Determining "best value" during the SORAP has not been based on long-term investment principles for the entire force. Further, until there is a fundamental change in policy, there is no chance this trend will naturally reverse. According to DoDD 5000.2-R,[8] cost must be viewed as an independent variable. Accordingly, SMs are required to establish aggressive but realistic objectives for all programs and follow through by trading perfor-

Federal Acquisition Regulation Plain Language Initiative

The Defense Acquisition Regulations Council (DARC) and the Civilian Agency Acquisition Council (CAAC) are actively pursuing implementation of the President's memorandum of June 1, 1998, "Plain Language in Government Writing." The President's memorandum directed Executive Departments and Agencies to use plain language in future rulemaking documents and consider rewriting regulations in plain language as time permits. The National Performance Review and the Office of Management and Budget also have emphasized the importance of using plain language in government writing.

The DARC and CAAC have issued a *Federal Acquisition Regulation Drafting Guide* that applies to all amendments to the Federal Acquisition Regulation (FAR). The guide encourages simple writing through the use of common everyday words, short sentences and paragraphs, logical organization, and the active voice. The DARC and CAAC recently issued a completely revised FAR Part 25, "Foreign Acquisition," that incorporates the principles in the guide. The DARC and CAAC also recently issued a proposed rule amending the FAR to include drafting principles that enhance a common understanding of the regulation. The proposed rule covers topics such as arrangement of regulations within the FAR and conventions for interpreting the FAR.

Currently, the DARC and CAAC are working on several FAR amendments to further the plain language initiative. These FAR amendments include a plain language rewrite of FAR Part 27, "Patents, Data and Copyrights," and a FAR revision to conform definitions in the FAR to the drafting guide. OFPP is working with the CAAC to ensure that the introductory descriptions of regulations in Federal Acquisition Circulars, which disseminate regulations amending the FAR, adhere to plain language principles.

The CAAC and DARC are committed to improving the FAR by adherence to the principles in the guide. A copy of the guide is available at the **www.ARNET.gov** Web site.

mance, supportability, cost, and schedule, beginning early in the program. This is not happening because "withholding program funds for unknown support investments" is nearly taboo, especially when that investment will not realize a positive return on investment for many years. The fact remains; organic supportability requires investment in infrastructure, equipment, and training. This is an up-front cost that is not easily planned and usually goes unbudgeted.

Premature Decisions

Fourth, Logistics Support Analyses (LSA), which include Mean Time Between Failure analysis, Failure Modes Effects and Criticality Analysis, Repair Level Analysis, and other maintenance-related analyses are completed by prime contractors. Two problems arise. One, the decisions of the SORAP are often complete before these LSA are mature; therefore, decisions about repair requirements and their associated costs are guesses, at best. Two, the entity that stands to gain the most if repairs are contracted out is the prime contractor. The entire cost comparison basis for the SORAP considers numbers of repairs, difficulty of repairs, cost of repairs, etc., as part of the "best value" calculation. Carefully crafted analyses, by profit-minded contractors in a shrinking business base, who have all the requisite support equipment, trained personnel, and technical data (they designed and produced the items) will almost certainly drive SOR determinations (especially for new technology) back into their own hands.

Competition and Equal Footing

Fifth, the SORAP does not provide for government and contractor entities to compete on an equal footing. The process has forced the initial investment costs of organic repair to be added to the overall cost-benefit-analysis model. Inequitably, the process allows contractor estimates to disregard this cost as a "sunken cost." The fact remains; they already have the capital equipment, trained personnel, extensive data and adequate facilities. So, we place ourselves in the position of accepting the recommendation for contractor repair. Seldom, in extreme cases only, do we ever fully recover if this is the wrong course.

Outsourcing Reality

Acquisition and logistics reforms and the movement toward outsourcing are reality. They are unproven in the long-term, but a reality nonetheless. According to Secretary of Defense Cohen, "We see its fruits [outsourcing and competigion] every day in the better service it gives our troops and the better balance it gives our ledgers. It empowers workers, both public and private, challenging them to provide higher quality and lower cost."

I agree we can see short-term "fruits every day." Will we see them in 20 or 30 years is the question. What is not said about the short-term is equally alarming. Overhead rates for Contractor Logistics Support contracts are skyrocketing, especially for sole-source vendors. This unplanned budgetary backlash is not easily disentangled nor publicly touted.

A final observation about outsourcing: Commercial entities are unstable by comparison to government entities, and their allegiances are to stockholders and profit-minded executives, not taxpayers. Therefore, when a business segment is 10, 20, or 30 years old or becomes insolvent or inefficient, it is divested. What are the remnants? Diminishing sources of repair, poor supply response, and spare parts shortages. I see it every day. And every day I see businesses going out of "the business" and the victims of outsourcing (warriors) frantically returning to the organic depot repair facility for emergency situations ... a day late and a dollar short.

Final Thoughts

At some level, the DoD is going to recognize that mission capable rates are destined for the basement, while Mission Impaired Capability Awaiting Parts (MICAP) hours are soaring toward the stars. Simultaneously, SSMs at the Air Logistics Centers are going to see weapon system support cost become impossible to manage as they become the only customers in the world for a single handful of extremely expensive contractors. Contractors who are fully aware that the Air Force has established no other option than to pay the bill for a must-have combat capability that supports *Global Engagement: A Vision for the 21st Century Air Force*.[9]

Historically, senior leaders and strategic planners mistrusted ideas that were radical, rapid, and revolutionary. They preferred calculated, complete, and correct. The SORAP and outsourcing in general stand as examples of getting the order wrong. I fear the, "Fire! Ready! Aim!" syndrome has arrived. Ultimately, who pays the highest price? If not warfighters on the battlefield or in the battlespace, then it may be the American who loses an irreplaceable treasure—a son, a daughter, or perhaps worse yet, *freedom*.

Editor's Note: The author welcomes questions or comments on this article. Contact him at **Kenneth.Bowling@tinker.af.mil.**

References

1. Joint Publication (JP) 4-0, *Doctrine for Logistic Support of Joint Operations*, April 6, 2000.
2. Secretary of Defense William S. Cohen, Defense Reform Initiative (DRI) Report, November 1997.
3. DoDD 4151.18, *Maintenance of Military Materiel* (Department of Defense, Aug. 12, 1992).
4. AFI 21-102, *Depot Maintenance Management* (Department of the Air Force, July 19, 1994).
5. DoDD 4151.18., D. (3-7), p. 2.
6. AFMC/CC Memorandum, "Responsibility and Accountability for Fielded Systems," Jan. 7, 2000.
7. AFI 63-107, *SORAP Guide,* Attachment 3 (Department of the Air Force, May 3, 2000).
8. DoDD 5000.2-R, *Mandatory Procedures for Major Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs* (Department of Defense, March 23, 1998).
9. *Global Engagement: A Vision for the 21st Century Air Force*, National Security Strategy (Department of the Air Force, Oct. 6, 1999).